

What is claimed is:

1. An LCD device comprising:
 - a substrate;
 - a gate line arranged in one direction on the substrate and having a predetermined portion bent angularly and inwardly;
 - a gate electrode projecting from the gate line;
 - a gate insulating layer disposed on the substrate;
 - a data line overlapping some of the bent portion of the gate line, the data line perpendicular to the gate line to define a pixel region;
 - a source electrode projecting from the data line;
 - a drain electrode on the gate insulating layer at a fixed interval from the source electrode;
 - an active layer below the data line, the source electrode and the drain electrode; and
 - a pixel electrode in the pixel region.
2. The LCD device of claim 1, wherein at least a section of the bent portion of the gate line is curved.
3. The LCD device of claim 1, wherein the active layer overlaps an upper side of the gate electrode and predetermined portions of the source and drain electrodes.
4. The LCD device of claim 1, wherein the data line comprises a metal having at least one of chrome Cr, molybdenum Mo, titanium Ti, tantalum Ta, and a molybdenum Mo alloy containing MoW, MoTa or MoNd.

5. The LCD device of claim 1, wherein the pixel electrode comprises Indium-Tin-Oxide ITO, Indium-Zinc-Oxide IZO or Indium-Tin-Zinc-Oxide ITZO.

6. The LCD device of claim 1, further comprising a passivation layer on an entire surface of the substrate, the passivation layer having a first contact hole at one portion of the drain electrode.

7. The LCD device of claim 6, wherein the passivation layer comprises at least one of an inorganic insulating material and an organic insulating material.

8. An LCD device comprising:

a substrate;

a gate line arranged in one direction on the substrate, the gate line having a predetermined portion bent angularly and inwardly;

a gate electrode projecting from the gate line, the gate electrode having a predetermined portion bent angularly and inwardly;

a gate insulating layer disposed on a surface of the substrate;

a data line overlapped with some of the bent portion of the gate line, the data line disposed perpendicular to the gate line to define a pixel region;

a source electrode projecting from the data line;

a drain electrode formed at a fixed interval from the source electrode, the drain electrode overlapped with the bent portion of the gate electrode;

an active layer below the data line, the source electrode and the drain electrode; and

a pixel electrode in the pixel region.

9. The LCD device of claim 8, wherein at least a section of the bent portion of the gate line is curved.

10. The LCD device of claim 8, wherein at least a section of the bent portion of the gate electrode is curved.

11. A method for manufacturing an LCD device comprising:

forming a gate line arranged in one direction on a substrate, the gate line having a predetermined portion bent angularly and inwardly;

forming a gate electrode projecting from the gate line;

sequentially depositing a gate insulating layer, a semiconductor layer and a conductive layer on the substrate including the gate line;

etching the conductive layer to form a data line overlapped with some of the bent portion of the gate line, thereby defining a pixel region, the data line perpendicular to the gate line;

forming a source electrode projecting from the data line;

forming a drain electrode at a fixed interval from the source electrode on the gate insulating layer;

forming an active layer by etching the semiconductor layer with the data line, the source electrode and the drain electrode as a mask; and

forming a pixel electrode in the pixel region.

12. The method of claim 11, wherein a predetermined portion of the gate electrode is bent angularly and inwardly.

13. The method of claim 11, wherein the drain electrode is overlapped with some of the bent portion of the gate electrode.

14. The method of claim 11, wherein at least a section of the bent portion of the gate line is curved.

15. The method of claim 12, wherein at least a section of the bent portion of the gate electrode is curved.

16. The method of claim 12, wherein the drain electrode is overlapped with some of the bent portion of the gate electrode.

17. An LCD device comprising:

a substrate;

a gate line arranged in one direction on the substrate;

a gate electrode projecting from a first side of the gate line;

a gate insulating layer disposed on the substrate;

a data line perpendicular to the gate line, thereby defining a pixel region;

a source electrode projecting from the data line;

a drain electrode on the gate insulating layer at a fixed interval from the source electrode;

an active layer below the data line, the source electrode and the drain electrode; and

a pixel electrode in the pixel region,

wherein a boundary of a second side of the gate line opposing the first side, and disposed in a portion of the gate line that overlaps the data line, is greater than a width of the data line.

18. The LCD device of claim 17, wherein a boundary of the gate electrode that overlaps the drain electrode is greater than a width of the drain electrode.

19. The LCD device of claim 17, wherein a notch is formed in the gate line, and at least a portion of the boundary defines a portion of the notch.

20. The LCD device of claim 19, wherein at least a section of the notch is disposed directly opposite to the gate electrode.

21. The LCD device of claim 19, wherein an edge of the notch is aligned with an edge of the gate electrode.

22. The LCD device of claim 21, wherein the edge of the notch and the edge of the gate electrode are non-parallel with an edge of a portion of the gate line in which the notch is not formed.

23. The LCD device of claim 22, wherein the edge of the notch and the edge of the gate electrode are parallel with an edge of the data line.

24. The LCD device of claim 19, wherein a width of the notch is less than a width of the gate electrode.

25. The LCD device of claim 19, wherein a length of the notch is less than a length of the gate electrode.

26. The LCD device of claim 19, wherein an edge of the notch and an edge of the gate electrode are non-parallel with an edge of a portion of the gate line in which the notch is not formed.

27. An LCD device comprising:

a substrate;

a gate line arranged in one direction on the substrate;

a gate electrode projecting from one side of the gate line;

a gate insulating layer disposed on the substrate;

a data line perpendicular to the gate line, thereby defining a pixel region;

a source electrode projecting from the data line;

a drain electrode on the gate insulating layer at a fixed interval from the source electrode;

an active layer below the data line, the source electrode and the drain electrode; and

a pixel electrode in the pixel region,

wherein a capacitance formed by a total overlap between the gate line and the data line and one of between the gate electrode and the data line and between the gate electrode and the source electrode remains substantially constant with movement of the gate line in a direction of a width of the data line.

28. The LCD device of claim 27, wherein a boundary of the gate electrode that overlaps the drain electrode is greater than a width of the drain electrode.

29. The LCD device of claim 28, wherein a notch formed in the gate line decreases the capacitance between the gate line and the data line and substantially compensates for the capacitance between one of between the gate electrode and the data line and between the gate electrode and the source electrode.

30. The LCD device of claim 29, wherein at least a section of the notch is disposed directly opposite to the gate electrode.

31. The LCD device of claim 29, wherein an edge of the notch is aligned with an edge of the gate electrode.

32. The LCD device of claim 31, wherein the edge of the notch and the edge of the gate electrode are non-parallel with an edge of a portion of the gate line in which the notch is not formed.

33. The LCD device of claim 32, wherein the edge of the notch and the edge of the gate electrode are parallel with an edge of the data line.

34. The LCD device of claim 29, wherein a width of the notch is less than a width of the gate electrode.

35. The LCD device of claim 29, wherein a length of the notch is less than a length of the gate electrode.

36. The LCD device of claim 29, wherein an edge of the notch and an edge of the gate electrode are non-parallel with an edge of a portion of the gate line in which the notch is not formed.